JUL 17 2009

L-PI-09-073
10 CFR 50.73

U S Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant Unit 1
Docket 50-282
License No. DPR-42

LER 1-09-05, Reactor Trip Due to 12 Circulating Water Pump Trip Caused by Electrical Ground Fault

Northern States Power Company, a Minnesota corporation (NSPM), herewith encloses Licensee Event Report (LER) 1-09-05. The LER describes a turbine trip that resulted in a reactor trip. The lockout of 12 Circulating Water pump due to a ground fault in the power supply cable caused the turbine trip. Please contact us if you require additional information related to this event.

Summary of Commitments

This letter contains no new commitments and no changes to existing commitments.

Michael D. Wadley
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company - Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
Department of Commerce, State of Minnesota

ENCLOSURE

LICENSEE EVENT REPORT 1-09-05

3 Pages Follow

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0066), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Prairie Island Nuclear Generating Plant Unit 1	05000282	1 of 3

4. TITLE

Reactor Trip Due to 12 Circulating Water Pump Trip Caused by Electrical Ground Fault

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	18	2009	2009	– 005 –	00	07	17	2009	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

MODE 1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☑ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Kathryn Mews	651.388.1121

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	KE	CBL5	0040	Y					

14. SUPPLEMENTAL REPORT EXPECTED

○ YES (If yes, complete 15. EXPECTED SUBMISSION DATE). ⊙ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On May 18, 2009 at 1305 hours, the site experienced a lockout of the 12 Circulating Water pump due to a ground fault in the power supply cable. This resulted in a turbine trip and associated reactor trip of Unit 1. Corrective actions taken or planned include repair of the faulted cable and improvements in the implementation of the cable monitoring program.

EVENT DESCRIPTION

At 1304 Central Daylight Time (CDT) on May 18, 2009 while Prairie Island Nuclear Generating Plant Unit 1 was operating at 100 percent power, control room annunciators alerted operators that 12 Circulating Water (CW) pump[1] locked out. This caused circulating water flow rate through the condensers to be reduced and a subsequent decrease in condenser vacuum. A differential pressure developed between the two condensers which automatically tripped the turbine. The turbine trip automatically tripped Unit 1 reactor at 1305 CDT. Throughout the event, safety systems operated as expected.

The station determined 12 CW pump lockout occurred due to a ground fault in the power supply cable. The cause for the fault has been determined to be age related degradation, accelerated by water intrusion. The cable was purchased in 1972 from the Okonite Company. The cable was rated at 5 kV with a copper conductor and insulated with Okoguard (equivalent to ethylene propylene rubber).

This event is reportable since actuation of several systems to which 10 CFR 50.73(a)(2)(iv)(A) applies occurred. Auxiliary feedwater pumps automatically started on low steam generator level. All control rods fully inserted. Decay heat removal was accomplished via auxiliary feedwater and condenser steam dump. Offsite power was maintained to safeguards and non-safeguards alternating current buses.

EVENT ANALYSIS

Testing of the CW pump cables revealed a single phase fault in the power supply cable. The pump motor was not damaged. This cable was replaced as part of corrective actions. The cable had experienced water intrusion which ultimately reduced the service life of the cable.

The event did not have the potential to prevent the fulfillment of safety functions. The turbine trip resulted in a reactor trip as expected and all other safety-related equipment functioned as designed. There was no safety system functional failure.

SAFETY SIGNIFICANCE

There were no safety consequences impacting plant or public safety as a result of this event.

The CW pump trip initiated a turbine trip, resulting in a reactor trip. The reactor trip is necessary due to a loss of the turbine as a heat sink for the reactor coolant system. Thus, the actuation of the reactor protection system was valid for this plant condition. During the reactor shutdown, all required safety systems responded appropriately.

There were no releases of radioactivity. There was a small thermal transient in the external circulating water system. The temperature trends were analyzed and judged to be within the bounds of normal variations.

[1] EIIS System Identifier: KE

CAUSE

The reactor trip and safety system actuations were caused by the age-related failure of a power supply cable. Contributing factors were that cable aging management did not identify and replace cables with known susceptibility to accelerated aging. Corrective actions from operating experience evaluations were not effectively implemented in a complete and timely manner.

CORRECTIVE ACTION

Short term corrective actions included replacing the failed cable. Long term corrective actions include replacement and monitoring of other cables that may be vulnerable to similar failures. The cable monitoring program will be fully implemented to identify, test, and inspect cables that are potentially susceptible to failure.

Additionally, industry operating experience identified that the cable manufactured during this timeframe was susceptible to contaminants being introduced into the insulation during the manufacturing process. The cable from the event is being tested to determine if potential contaminants contributed to this failure.

PREVIOUS SIMILAR EVENTS

In September 2008, the site recognized that it had not fully implemented the response to NRC Generic Letter 2007-01 by fully implementing an underground cable monitoring program.